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SUMMARY

A coalition of several major industrial and land transportation radio user associations (the Coalition) have come together to present the common views of major U.S. industries on some of the more significant issues in this proceeding.

The Coalition wishes to emphasize that it shares the Commission's goal in this undertaking -- to increase substantially the communications capacity of the land mobile bands below 512 MHz. However, the Coalition believes that a path to that goal other than that proposed by the Commission should be followed. To this end, the Coalition recommends adoption of the migration path to narrowband technologies outlined by the Land Mobile Communications Council (LMCC) in its Consensus Plan submitted on April 28, 1993. For the 150-174 MHz band, the Coalition recommends adoption of LMCC's Option B, which looks to implementing truly narrowband channelization (i.e. 6.25, rather than 12.5 kHz) by the year 2004.

The Coalition also supports adoption of LMCC's recommendations with respect to power/antenna height limits and geographic separation of co-channel stations.

The Coalition strongly opposes the Commission's proposal to eliminate the existing radio services and to lump together all land mobile licensees into three broad categories (plus a fourth catch-all pool). Instead, the Coalition recommends consolidation of the services into six compatible groups, which would preserve most of the benefits of the current land mobile spectrum management system while achieving the Commission's objective of reducing the number of services.

In other matters, the Coalition supports the proposals aimed at introducing exclusivity in the assignment of frequencies in the bands below 470 MHz, but recommends that exclusivity not be based on leading element safety and system design considerations should

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MAY 28 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Replacement of Part 90 by Part 88) PR Docket No. 92-235
to Revise the Private Land Mobile)
Radio Services and Modify the)
Policies Governing Them)

**COMMENTS OF THE COALITION OF INDUSTRIAL AND
LAND TRANSPORTATION LAND MOBILE RADIO USERS**

The Coalition of Industrial and Land Transportation Land Mobile Radio Users (hereinafter referred to as the "Coalition")¹ respectfully submits its comments in response to the Commission's Notice of Proposed Rule Making in the above-captioned proceeding ("Notice").


I. PRELIMINARY STATEMENT

The Coalition has been formed in order to present to the Commission in a single document the surprisingly common views of a number of broad-based and diverse land mobile radio communications user groups on some of the more important issues in the proceeding. The members of the Coalition represent basic U.S. industries in manufacturing, forest products and land transportation. Land mobile radio plays a vital role for the safety and operational

¹ The members of the Coalition are: Forest Industries Telecommunications ("FIT") representing the licensees in the forest products industry; Manufacturers Radio Frequency Advisory Committee, Inc., ("MRFAC") representing the licensees in the Manufacturers Radio Service; American Trucking Associations Inc. ("ATA"), representing not only the trucking industry and also the other eligible industries in the Motor Carrier Radio Service, such as intercity and local carriers of passengers; and International Taxicab and Livery Association ("ITLA"), representing the taxi livery and related ground transportation industries.

efficiency of Coalition members. Mobile radio communications requirements in their industries are being met primarily by private radio systems, specifically designed and tailored to meet specific requirements. The members of the Coalition expect that such private systems will continue to provide the land mobile communications service they will need in the future. Therefore, it is vital that the Commission continues to provide the spectrum resources and the regulatory framework under which those important communications requirements will continue to be effectively met.

The Coalition wishes to make it clear at the outset that its members support the Commission's primary goal of increasing the capacity of the land mobile spectrum through the implementation of



facilitate the introduction of new technologies. A more reasonable alternative is recommended.

Additionally, the proposed limitations on effective radiated power are unnecessarily restrictive and could be counterproductive

systems. Many radio models now in use simply cannot be effectively
nonredundant 3. For those that are, the cost involved would be

(LMCC) submitted a "consensus plan" addressing a number of issues in the proceeding. Members of the Coalition participated actively in the preparation of LMCC's Plan. With respect to migration, LMCC recommended a path for the 421-512 MHz bands and two alternative paths (Options A and B) for the 150-174 Mhz band. The Coalition supports fully LMCC's recommendation concerning the 421-512 MHz bands. For the 150-174 MHz band, the Coalition recommends adoption of Option B.

B. Migration for the 421-512 MHz Bands

LMCC's migration plan for the 421-512 Mhz band contemplates full implementation of 12.5 kHz channels by January 1, 2004;⁴ radio systems on 12.5 kHz channels would be authorized on a coordinated basis on the existing 12.5 kHz offset channels beginning on January 1, 1996. The proposals in this plan are reasonable and should be adopted.

The plan further contemplates setting aside a portion of the existing 12.5 kHz offset frequencies in the 450-470 MHz band for primary, 12.5 kHz operation, full power or low power. To accomplish that objective, the Commission would designate in this proceeding specific offset frequency pairs which are to be available for site-specific licensing in the various services.

LMCC contemplates that representatives of the services would recommend the specific percentage of frequencies to be used for

⁴ Under LMCC's plan, existing licensees in the 421-512 and 150-174 MHz bands, who do not wish to convert their systems, would be permitted to continue to operate but on a secondary basis. The Coalition agrees with this proposal.

site-specific operation and those that will continue to be used for secondary low power mobile operations. It is the collective view of the members of the Coalition that fifty percent (50%) of the offset frequency pairs in the 450-470 MHz bands should be designated for primary, site-specific operations.

C. Migration for the 150-174 MHz Band

Unlike the frequencies in the 421-512 MHz band, LMCC offered the Commission two options for 150-174 MHz, Option A and Option B, without endorsing either.

Briefly, Option A contemplates requiring existing systems on frequencies at 150-174 MHz to convert to 12.5 kHz channels by 2004. Existing licensees would replace their equipment by the year 2004 and would be assigned new 12.5 kHz frequencies. Reducing the channel width from the current 15 kHz to the new 12.5 kHz channels would yield approximately 15% more assignable frequencies, or approximately 95 new frequencies in the entire 150-174 MHz band. Conversion to fully narrowband operations (i.e., to 6.25 kHz channels) would be accomplished several years beyond 2004. That conversion would require licensees to again replace their equipment.

By contrast, Option B contemplates that existing land mobile licenses would convert their systems to 6.25 kHz, rather than 12.5 kHz, channels by the year 2004. Further equipment changes are not contemplated. Option B would increase the number of assignable frequencies by a factor of three, from approximately 550 to approximately 1700 frequencies. No further equipment replacements

or other significant expenditures would be required.

Option B is decidedly preferable for several reasons. First, there is simply not enough "bang for the buck" under Option A. Under Option A, existing licensees would have to replace several millions of radios and spend hundreds of millions of dollars for new equipment -- all for creating only approximately 95 additional assignable frequencies. Moreover, licensees apparently would have to look forward to replacing their equipment again several years further down the road. By contrast, under Option B, the same replacement of equipment by the same year 2004 will yield over 1,100 new channels for roughly the same costs. Moreover, licensees under Option B would be assured that they would not be required in the foreseeable future to replace their equipment a second time. In other words, while under Option A it would take two equipment change-outs, twice the expense, and 20 years to achieve true narrowband operations in the 150-174 MHz band, under Option B, this goal would be achieved in 10 years and at approximately half the cost.

If, as LMCC suggests, adoption of Option B would place the Commission in the posture of having to adopt for the future a technology for which there is not enough "real world" experience, the Coalition suggests that the Commission explore this issue in a further rule making directed specifically to the proper channelization of the 150-174 MHz band and the migration path to that channelization. In the meantime, as contemplated under Option B, the Commission should begin authorizing operations on 6.25 kHz

channels in the 150-174 MHz band on January 1, 1996, on a voluntary and coordinated basis.

D. Frequencies in the 25-50 MHz bands

The Commission does not propose to narrow the channels in the 25-50 MHz band. Because of the propagation characteristic of this band, the Coalition agrees that narrowing these channels now would not be desirable.

III. SERVICE CONSOLIDATION

Despite widespread opposition to consolidation of the land mobile radio services expressed in many comments in response to the Notice of Inquiry,⁵ the Commission is pursuing the matter. In Para. 17 of its Notice, the Commission described two alternatives: (1) consolidating all of the current private land mobile radio services and allocating their frequencies to three broad categories: a public safety, a non-commercial, and an SMR category plus a fourth, catch-all pool encompassing all three; or (2) retaining the current services but allocating all newly-created frequencies to the three broad categories plus the "general"

⁵ See, for example, Comments in response to the Notice of Inquiry, PR Docket 90-170, filed by ITLA, Association of American Railroads (AAR), American Automobile Association (AAA), Central Station Alarm Association (CSAA), International Association of Fire Chiefs (IAFC), State of Washington State Patrol, Association of Oregon Loggers, Union Pacific Railroad, Georgia-Pacific Corporation, Weyerhaeuer Information Systems; Forest Industries Telecommunications, Manufacturers Radio Frequency Advisory Committee; American Trucking Association. Now, Associated Public Safety Communications Officers (APCO) and other public safety representatives have joined those who oppose consolidation. See, APCO Ex Parte memorandum in PR Docket 92-235, dated January 12, 1993.

category pool. Although the Commission states that ". . . we do not favor either of these alternatives", Notice, page 21, the Commission has nevertheless, drafted the proposed new rules (proposed Rules Part 88) on the assumption that the services and the allocations will be consolidated into the three broad categories.

The Coalition vigorously opposes consolidation of the Radio Services as proposed in the Notice.

The basic land mobile radio services were created nearly half a century ago. See generally, General Mobile Radio Service, 13 FCC 1190 (1949). By having like users share the same frequencies, it was hoped that greater compatibility would be achieved between and among those users -- a particularly important consideration given the fact that the channels below 470 MHz were all to be shared. Increased compatibility has in fact been achieved with the result that sharing efficiency has been maximized and interference levels reduced.⁶

⁶ The Notice suggests that interservice sharing is too expensive and time-consuming. Id. at Para. 16. However, the Notice cites no data for this notion, and the Coalition knows of none. In fact, the Notice is conspicuous for its failure to address hard data supplied by basic industrial and land transportation coordinators -- statistics which show that interservice coordination in those services, at least, works and works well. See Joint Reply Comments of the Manufacturers Radio Frequency Advisory Committee, Inc.; Forest Industrial Telecommunications and American Trucking Association, in PR Docket 90-170, pp. 3-5. For example, in 1991 FIT processed over 9,000 requests for interservice coordination of shared (common) frequencies. All of these requests were successfully coordinated. Each request was completed within 5 to 8 days. In the same year, FIT handled 445 requests for out-of-service (i.e., Section 90.176) coordination. Again, practically all requests were successfully coordinated within a 4-5

By contrast, the Commission's proposal would lump all manner of disparate users together in, for example, a "Non-Commercial" pool thereby greatly complicating the coordination function and increasing the risk of interference. The operational needs of farmers and ranchers, for example, are not the same as those of manufacturers or truckers.

In the Business Radio Service there are tens of thousands of essentially uncoordinated offset frequency users; for none of these does the Commission or coordinators have an accurate set of geographic coordinates.⁷ Rather they have been effectively licensed as itinerants on a point-and-radius basis. The net result is a situation where a Wendys can be located in close proximity to a manufacturing facility and in the process create the risk of interference to the latter's radio facilities. Interference such as this can shut down assembly lines and place at risk the safety of employees working with heavy loads and dangerous materials.⁸

Moreover, basic industries, such as manufacturing, forest products, trucking and others must have a reliable source of

day turn-around period. The performance of other Coalition members is to like effect.

⁷ The Commission's failure in the past to insist on specific coordinates for such users has exacerbated problems which the re-farming Notice in part seeks to fix; i.e., poor communications quality resulting from a cavalier reliance on offset users' "secondary" status to control interference.

⁸ Employees at a large manufacturing company narrowly escaped serious injury or death recently due to interference with a radio-controlled overhead crane which was in the process of moving the

frequencies. The present allocations structure below 470 MHz provides a degree of assurance that frequencies will be available when needed. U.S. manufacturers are under relentless pressure to

increasing the communications capacity of the below-512 MHz land mobile spectrum. This is a far better and more effective approach to the problem (real or perceived) than providing minor relief to the most congested services by worsening the congestion in all services, even in those services where radio is used primarily for safety.

The consolidation proposed in the Notice also carries with it the notion of generic, "one-size-fits-all" frequency coordination. While this might be acceptable in some services, it is absolutely unacceptable to basic industrial and transportation licensees where radio is essential to safety and productivity. This requires coordination by entities with in-depth knowledge of their respective industries. FIT, MRFAC, ATA, ITLA et al, have been coordinating frequencies for their respective users for over 30 years. In all these services, coordinators carefully fit new systems and systems changes into the existing environment. Generic coordination will not meet the requirements of licensees in these radio services.¹⁰

The value of user representative coordinating committees has been recognized by the Commission as well as by the Congress. In its Report and Order in PR Docket 83-737, where the role of user

¹⁰ While the Notice speaks only in terms of consolidating (read "abolishing") Radio Services, not coordinators, the net effect would be the same: consolidation as proposed in the Notice would seriously undermine representative coordinators' ability to harmonize new applications with the existing radio environment. In the process, it would destroy the benefits achieved by the representative coordinator system.

representative coordinators was strengthened, the Commission referred to the Conference Report on the Communications Act Amendments of 1982. The Commission observed with approval that Congress had found:

. . . . frequency coordinating committees not only provide for more efficient use of the congested land mobile spectrum but also enable all users, large and small, to obtain the coordination necessary to place their station on the air

and that:

. . . . the Conferees encourage the Commission to recognize those frequency coordinating committees for any given service which are most representative of the users of that service

Report and Order, PR Docket 83-737, 60 RR2d 45-46 (1986). Clearly, the public interest -- and Congressional objectives -- would not be served by the adoption of policies which, in effect, cast aside the expertise of the well-established and well-functioning coordinator system -- expertise which will be especially valuable in facilitating the introduction of new technologies in the private land mobile bands.

The Coalition is of the view that a reduction in the number of radio services of which there are 19 today, can be accomplished without necessarily jeopardizing the values of user compatibility and coordinator representativeness which remain as valid today as they were more than 30 years ago. In particular, the Joint Commenters propose a reduction in the 19 services to six, organized as follows:

<u>Public Safety</u>	<u>Industrial/Utilities Radio Service</u>
Public Safety National Plan	Power
Local Government	Petroleum
Police	Forest Products
Fire	Manufacturers
Emergency Medical	Telephone Maintenance

Special Industrial Radio Service
Special Industrial
Motion Pictures
Relay Press

<u>Land Transportation Radio Service</u>	<u>Business</u>
Motor Carrier	Business
Railroad	Special Emergency (other than Emergency Medical)
Taxicab	Private Carrier Paging
Automobile Emergency	

SMR
800 MHz SMR
900 MHz SMR
220-222 MHz Commercial
Commercial Pool below 512 MHz

In formulating this plan, user compatibility and control of interference are achieved by organizing pools around compatible radio services which have shared frequencies for years. For example, the Petroleum and Forest Products Radio Services share successfully a large number of frequencies in the 40-50 MHz band; Petroleum, Forest Products, Manufacturers and Telephone Maintenance and Power share frequencies in the 150-160 MHz band; Forest Products, Petroleum, Telephone Maintenance, Power, and Manufacturers likewise share frequencies in the 450-470 MHz band. These services share more frequencies with each other than with any other service. Based on their proven track record of cooperation and compatibility, they can be expected to share quite nicely if merged into one pool. In so doing, the Commission could achieve the benefits desired from a reduction in the number of specialized

radio services while at the same time preserving and building upon the strengths of the existing system.¹¹

As to the role of coordinators, the members of the Coalition are of the view that the coordinators for the Radio Services consolidated into a particular pool should be authorized to coordinate frequencies for all of the services within that pool. Here again, the Coalition urges an approach which balances a reduction in the number of specialized services with the benefits of having coordinators who are familiar with the needs of their own industries and users, i.e. with representativeness; this in turn will enhance the coordinators' ability to facilitate users' entry into the brave new world of exclusivity and enhanced technology. But most importantly, consolidation as proposed here can be accomplished without doing violence to long-established usage and sharing patterns. The Coalition urges its adoption.¹²

IV. ANTENNA HEIGHT/ERP LIMITATIONS

The Commission has proposed height-power limits which would

¹¹ Moreover, the frequencies in the 150-174 and in the 450-470 MHz allocated to the Services within the recommended Industrial/Utilities group, for example, are generally contiguous. The same is true generally with respect to the frequencies allocated to the Public Safety, Land Transportation, and the Business Services. Thus, if availability of contiguous spectrum in a service group is considered useful for future implementation of advanced technology systems, the groupings suggested here would help advance that goal.

¹² This may render unnecessary the IG's proposals to create a cost accounting regime a la rate regulation, a system which the Commission has spent the last 25 years attempting to escape in the common carrier field.






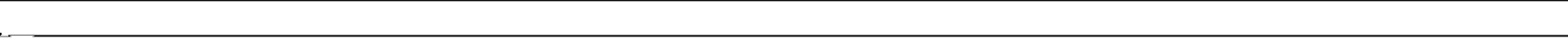





require significant reductions in power depending upon a particular transmitter's height above average terrain. For example, radiated power would be limited to no more than 300 watts ERP for stations up to 197 feet HAAT, with further reductions for heights above that.

The proposed height-power limits are much too restrictive, and would seriously impact many licensees. Many users would be unable to cover their designated areas. To provide that coverage they would be forced to install additional repeaters. That process would in turn require purchase or lease of additional remote antenna sites (if available) with the attendant environmental concerns and costs, the costs of installation and labor for such units, and the recurring costs of telco-supplied (or private) control links. All of this could be self-defeating from a spectrum efficiency standpoint inasmuch as users needing wide-area coverage would be led to request multiple frequencies, or be required to implement an expensive simulcast system and microwave links.

Instead of some of this, the Committee recommends that

others. We commend the plan to the Commission's attention.¹³

In this connection, the Coalition wishes to stress the importance of authorizing coordinators to request data from applicants relative to their proposed equipment and to decline



Docket No. 91-295 (i.e. those from 74.6-74.8 and 75.2-75.4 MHz). See Report and Order in PR Docket No. 91-295, FCC 92-534, released, December 14, 1992. These frequencies occupy vacant spectrum which previously existed as guard bands for 75 MHz aeronautical marker beacons. No other licensed operations have been allowed in these bands. Hence, there are no other users as to whom these 72-76 MHz low power operations could or should be secondary. The failure to accord primary status to users on these frequencies is unfounded.

Beyond this, the Notice provides no rationale for allocating 784 low power frequencies to the so-called General Category Pool and only 52 to the "Non-Commercial Radio Service." Manufacturers and the lumber industry have historically been among the heaviest users of 72-76 MHz low power mobile frequencies; yet, the Notice would allocate not a single such frequency to these users. This is contrary to historic usage and regulatory patterns and, more importantly, to the spectrum needs of basic industrial companies for applications such as remote control, materials handling and inventory.

As discussed previously (page 6), the channel-splitting proposal for the UHF band includes reservation of an undetermined number of channels for primary low-power (2 watt) usage. In order to achieve primary status the proposal would have users supply specific coordinates in all applications filed from and after January 1, 1994; users electing not to supply coordinates could continue to operate but only on the secondary basis that they currently enjoy.

Additionally, the Coalition recommends that the frequencies in the 72-76 MHz now set aside for low power mobile use in the Manufacturers, Forest Products, Special Industrial and the Railroad Radio Services, pursuant to Section 90.257(b), be retained in those services for use on a primary, coordinated basis to be used for low power operations within the confines of manufacturing plants, factories, lumber or paper mills, logging and construction sites, and in railroad yards.

Lastly, the Commission proposes to restrict the proposed very low power channels in the UHF band to telemetry only. Proposed Rule 88.7 defines telemetry as:

The transmission of non-voice signals for the purpose of automatically indicating or recording measurements at a distance from the measuring instrument.

Manufacturers, among others, have numerous uses for low power frequencies which may not meet the strict definition of telemetry. Remote control devices and inventory readers are two applications which come to mind. Given (1) the very low powers involved (i.e., the negligible risk of interference); (2) the importance of productivity-enhancing spectrum policies such as those noted above; and (3) the wealth of frequencies available for telemetry (see Rule 88.1293), there is no valid reason to artificially restrict use of these 1700 frequencies to telemetry only.¹⁴

¹⁴ There appears to be a discrepancy in the power levels specified for the telemetry channels, pages 11 and 25 of the

VI. FREQUENCY ASSIGNMENT POLICIES

A. Exclusive/Shared assignments

The Coalition supports the Commission's proposal to introduce exclusivity in the assignment of frequencies in the 150-170 and in the 450-470 MHz bands. Interference-free frequency assignments are necessary for safety-related land mobile communications systems, which are common in the industries represented by the members of the Coalition. Exclusive assignments are, of course, also necessary for advanced technology systems, such as centralized trunked and time division multiplex access (TDMA) systems. However, "exclusive" assignments are not always necessary or desirable. Decentralized, small, private land mobile systems sharing frequencies can also provide and are providing perfectly acceptable communications service economically and efficiently. Therefore, the Commission's Rules should provide for assigning frequencies in the 150-170 and in the 450-470 MHz bands for exclusive as well as for shared use.

Because it is not possible to determine the relative demand for exclusive versus shared assignments, the Coalition recommends that the Commission not set aside specific frequencies for exclusive use and or for shared use. Instead, all frequencies allocated to a service, or to a group of services (except for frequencies designated for itinerant or low power operations and frequencies in the 25-50 MHz bands, all of which should be subject to shared use), should be made available for exclusive or shared assignments. Low power and itinerant frequencies should be

available for shared use only.¹⁵

The Coalition also recommends that the Commission adopt a more flexible approach to the protection of "exclusive" assignments than the 50-mile co-channel separation the Commission has proposed. A more flexible approach is needed because system coverage and, therefore, protection requirements in the private land mobile radio services vary greatly from system to system and from licensee to licensee. For example, 50 miles of geographic separation would be totally inadequate for a system in the forest products industry that is designed to provide reliable service over more than 50 miles. By contrast, 50 miles between systems serving two-mile service areas would be excessive and spectrally inefficient. Therefore, instead of a single mileage separation standard, the Commission should adopt the co-channel separation tables recommended by LMCC in its Consensus Plan.¹⁶ Those tables provide flexibility to accommodate the varying coverage requirements of most land mobile licensees. Moreover, the desired to undesired signal ratios incorporated in those tables can be used to "engineer" systems even closer than the tables would allow.

The Coalition generally agrees with the notion that a licensee must "load" a frequency in order to be able to utilize it "exclusively." The loading requirements proposed in proposed

¹⁵ Moreover, because of the difficult propagation characteristics of the frequencies in the 25-50 MHz bands, their assignment should be based not on standardized exclusivity but on careful prior coordination.

¹⁶ See LMCC Consensus Plan, Appendices B and D.